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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/853,520	05/11/2001	Stephen Temple	27754/21.717	6788

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EXAMINER

TUGBANG, ANTHONY D

ART UNIT PAPER NUMBER

3729

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/853,520

Applicant(s)

TEMPLE ET AL.

Examiner

A. Dexter Tugbang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 23-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 23-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 16.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/15/03 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

3. Claims 1, 7-14 are rejected under 35 U.S.C. 102(b) as being anticipated by European Patent Publication EP 0 505 065, referred to hereinafter as EP'065.

EP'065 discloses a method of manufacturing a component of a droplet deposition apparatus comprising: attaching a body of piezoelectric material 2 (in Fig. 3a) to a surface of a base (substrate 1); depositing a layer of conductive material so as to extend continuously over the surface of the base and channel surfaces to provide an electrode 8 on each channel surface (grooves 3) and a conductive track (wiring pattern 9 in Fig. 5a) on the surface of the base which is integrally and continuously connected to the electrode (see sequence of Figs. 5a-5b and col. 5, lines 43+).

Regarding Claims 7-9, EP'065 teaches that the electrodes 8 are patterned and electrically isolated for different channels (as shown in Fig. 1) through the use of a mask 6 (in Fig. 4a) and

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that the conductive tracks (wiring pattern 9) are also electrically isolated from each other (as shown in Fig. 5c).

Regarding Claims 10-13, EP'065 shows in the sequence of Figures 3a and 3b that the body 2 is attached to the base 1 prior to forming channels (grooves 4) in both the body and the base. The channels formed in the piezoelectric body 2 and the base 1 are each formed by removing material or regions in each of the body and base. In Figure 1, discrete walls 2 of piezoelectric material are formed as a result of removing regions from at least the body.

Regarding Claim 14, EP'065 teaches chamfering the body 2 adjacent to the base 1 by the curved surface formed on the right side of the body and the base in Figure 3b.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP'065 in view of Ochiai et al 5,193,256.

EP'065 teaches the claimed manufacturing method as relied upon above. EP'065 does not teach removing regions of the layer of conductive material to define the electrodes.

Ochiai teaches forming a layer of electrodes 7 in channels in which portions or regions of the layer of electrodes are removed to pattern the electrodes (see col. 4, lines 18-30). It is noted

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that the electrodes and channels formed by Ochiai (in Fig. 5) are identical to the electrodes and channels formed by EP'065 (in Fig. 1).

Regarding Claim 6, the claimed "land" is read as the top surface of the piezoelectric body 2 joined with plate 8 in Ochiai and the removal of the layer of conductive material, i.e. strip of conductive material, occurs at this land or top surface. The "land" is between neighboring channels 10 (as shown in Fig. 6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the electrodes of EP'065 by an alternative process of removing regions of the layer of conductive material, as taught by Ochiai, to form art recognized equivalent droplet deposition apparatuses having identical structure in electrodes.

6. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP'065 in view of European Patent EP 0 397 441, referred to hereinafter as EP'441.

EP'065 discloses the claimed manufacturing method as relied upon above. EP'065 does not teach removing regions of the layer of conductive material to define conductive tracks.

EP'441 shows forming conductive tracks by local vaporization with a laser beam to pattern conductive material (see col. 7, lines 25+). The benefits of the above patterning process provides a faster more economic manufacturing process (see col. 6, lines 38-43).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the conductive tracks of EP'065 by alternatively patterning with the local vaporization taught by EP'441, to provide a faster, more economical manufacturing process.

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP'065.

EP'065 teaches the claimed manufacturing method as relied upon above. The embodiment (Figures 1-5) relied upon in EP'065 does not mention an adhesive.

However, the embodiment of Figures 10a-10b teaches the use of an adhesive 15 to attach the base to the body to prevent the any deterioration of the body through heat (see col. 10, lines 42-46).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified one embodiment of EP'065 by the use of an adhesive as taught by another embodiment of EP'065, to positively prevent any deterioration of the body through heat.

8. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP'065 in view of Ochiai et al, as applied to claims 1 and 2 above, and further in view of EP'441 for the same reasons set forth in Paragraph No. 6 above.

Response to Arguments

9. Applicant's arguments (in Paper No. 12) with respect to claims 1-15 and 23-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

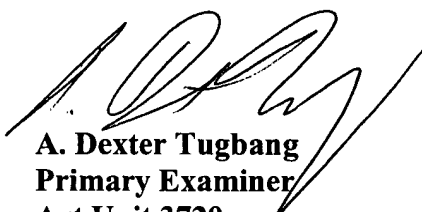
10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Dexter Tugbang whose telephone number is 703-308-7599. The examiner can normally be reached on Monday - Friday 7:00 am - 3:30 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0858.



A. Dexter Tugbang
Primary Examiner
Art Unit 3729

September 30, 2003